The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID KESSLER, ALLAN C.G. NUTT and RUSSELL J. PALUM

Appeal No. 2002-0621
Application 08/770,381

ON BRIEF

Before BARRETT, FLEMING, and RUGGIERO, **Administrative Patent Judges.**

FLEMING, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1, 4, 5, 10 through 12, 15, 17 and 18. Claims 2, 3, 6 through 9, 14 and 16 have been canceled. Claim 13 has been objected to for being dependent upon a rejected claim. Claim 19 was added by an amendment under 37 CFR § 1.116. The Examiner

responded in the advisory action by stating that the amendment would be entered upon filing a notice of appeal and appeal brief. However, the record does not show that claim 19 has been entered into the record.

Invention

The invention relates to a low-pass optical filter used in an electronic imaging system to reduce aliasing or undersampling artifacts. See page 1 of Appellants' specification.

Referring to figure 4, the preferred embodiment of a blur filter is shown. A double refractor 41 produces polarized light at each of the two spots. A second double refractor 45 has a plane 42 that is tilted at 45° to the first plane 43. The polarized light beam created by the double refractor 41 will be essentially unpolarized in the coordinate system of the second double refractor 45. In the preferred embodiment, the double refractors are made of a highly birefringent uniaxial crystal material such as lithium niobate. The birefringence of lithium niobate is 0.09. However, any uniaxial crystal material having a birefringence of greater than 0.05 falls within the scope of this invention. See page 8 of Appellants' specification.

Appellants' independent claim 1 is representative of Appellants' claimed invention and is reproduced as follows:

1. An imaging apparatus for generating an image signal from incident light with higher spatial frequencies of said incident light limited to reduce undersampling artifacts, said apparatus comprising:

an image sensor for generating the image signal from an array of photosites;

an optical section having a birefringent uniaxial crystal spatial filter interposed in a path of the incident light which removes a portion of said high spatial frequencies in said incident light to produce a blurred image on said photosites, said birefringent uniaxial crystal optical filter birefringence being greater than 0.05, and said birefringent uniaxial crystal optical filter being lithium niobate; and

wherein said spatial filter is comprised of a first plane plate and at least a second plane plate of lithium niobate.

References

The references relied on by the Examiner are as follows:

Watanabe et al. (Watanabe)	3,784,734	Jan. 8, 1974
Greivenkamp Jr.	4,575,193	Mar. 11, 1986
Fukushima '420	5,579,420	Nov. 26, 1996
Fukushima et al. (Fukushima '399)	5,646,399	Jul. 8, 1997
	(filing date	Jan. 29, 1996)
Takatori et al. (Takatori)	5,715,085	Feb. 3, 1998
	(filing date	Jun. 4, 1992)

Rejections at Issue

Claims 1, 10 through 12, 15 and 18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Greivenkamp in view of Fukushima '420. Claim 5 stands rejected under 35 U.S.C. § 103 as

being unpatentable over Greivenkamp and Fukushima '420 as applied to claim 1 and further in view of Takatori. Claim 4 stands rejected under 35 U.S.C. § 103 as being unpatentable over Greivenkamp and Fukushima '399. Claim 17 stands rejected under 35 U.S.C. § 103 as being unpatentable over Greivenkamp and Fukushima '399 and further in view of Watanabe.

Throughout the opinion, we will make reference to the brief and the answer for the respective details thereof.

OPINION

With full consideration being given to the subject matter on appeal, the Examiner's rejections and the arguments of Appellants and the Examiner, for the reasons stated **infra**, we affirm the Examiner's rejection of claims 1, 4, 5, 10 through 12, 15, 17 and 18 under 35 U.S.C. § 103.

A. Rejection of claims 1, 10 through 12, 15 and 18 under 35 U.S.C. § 103 over Greivenkamp and Fukushima '420.

Appellants argue that the 35 CFR § 1.131 declaration of prior invention filed July 3, 2000 is sufficient to overcome the cited patent Fukushima '420. See page 8 of Appellants' brief. Appellants argue that the declaration of prior invention establishes demonstrative evidence that shows that the invention

was conceived and in possession of the inventor on August 3, 1995, which is earlier than the effective date of the Fukushima '420 reference. See pages 8 through 11 of the brief.

Turning to the declaration for patent application and power of attorney, filed with the original application, we find that this declaration is signed by David Kessler, Allen C.G. Nutt and Russell J. Palum all residing at Rochester, New York as the signed inventors. Turning to the § 131 declaration filed July 3, 2001, listed as paper no. 17 on the file, we find that only David Kessler signed the declaration. In order to make a proper declaration under 37 CFR § 1.131, all the inventors of the subject matter must sign the declaration. See MPEP § 715.04. We note that MPEP § 715.04 does allow three exceptions for which less than the total number of inventors may sign. However, for these exceptions the applicants must establish that less than all the named inventors of the application invented the subject matter of the claim under rejection, a situation where some or all the inventors are not available or it is not possible to produce a declaration of an inventor. However, in the record before us, Appellants have not shown us any evidence for these exceptions. Therefore, we find that the declaration is not properly executed and thereby, does not meet the requirements

under 37 CFR § 1.131. Furthermore, we note that the declaration of prior invention is not complete. The declaration states on page 1 that a photocopy of David Kessler personal log marking August 3, 1995 is provided as evidence. However, this photocopy is not provided.

Now that we have established that Fukushima '420 is a proper reference, we now turn to the merits of the rejection of claims 1, 10 through 12, 15 and 18 under 35 U.S.C. § 103 as being unpatentable over Greivenkamp and Fukushima '420.

At the outset, we note that Appellants state on page 3 of the brief that claims 1, 10, 11 and 15 stand or fall together with claim 1 and that claim 12 stands alone. We further note that claims 10, 11 and 15 are not separately argued. 37 CFR § 1.192 (c)(7) (July 1, 2000) **as amended at** 62 Fed. Reg. 53196 (October 10, 1997), which was controlling at the time of Appellants filing the brief, states:

> For each ground of rejection which appellant contests and which applies to a group of two or more claims, the Board shall select a single claim from the group and shall decide the appeal as to the ground of rejection on the basis of that claim alone unless a statement is included that the claims of the group do not stand or fall together and, in the argument under paragraph (c)(8) of this section, appellant explains why the claims of the group are believed to be separately patentable. Merely pointing out differences in what the claims cover is not an argument as to why the claims are separately patentable.

We will, thereby, consider the Appellant's claims 1, 10, 11 and 15 as standing or falling together and we will treat claim 1 as a representative claim of that group. Furthermore, we will consider claim 12 separately. **See also In re McDaniel**, 293 F.3d 1379, 1383, 63 USPQ2d 1462, 1465 (Fed. Cir. 2002) ("If the brief fails to meet either requirement [of 37 CFR § 1.192 (c)(7)], the Board is free to select a single claim from each group of claims subject to a common ground of rejection as representative of all claims in that group and to decide the appeal of that rejection based solely on the selected representative claim.")

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a **prima facie** case of obviousness. **In re Oetiker**, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). **See also In re Piasecki**, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing that some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art suggests the claimed subject matter. **In re Fine**, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Only if this initial burden is met does the burden of coming

forward with evidence or argument shift to the Appellants. **Oetiker**, 977 F.2d at 1445, 24 USPQ2d at 1444. **See also Piasecki** 745 F.2d at 1472, 223 USPQ at 788.

An obviousness analysis commences with a review and consideration of all the pertinent evidence and arguments. "In reviewing the [E]xaminer's decision on appeal, the Board must necessarily weigh all of the evidence and argument." **Oetiker**, 977 F.2d at 1445, 24 USPQ2d at 1444. "[T]he Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion." **In re Lee**, 277 F.3d 1338, 1344, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002).

Appellants point out that Greivenkamp teaches an optical section having a birefringent uniaxial crystal spatial filter interposed in a path of incident light wherein the spatial filter is constructed using a pair of birefringent elements with a wave plate sandwiched between the birefringent elements. Appellants argue that the Greivenkamp's wave plate removes wavelengths rather that blur certain high frequencies of the image. See page 4 of Appellants' brief.

Turning to Appellants' claim 1, we note that Greivenkamp teaches all the elements of Appellants' claim except for the birefringent uniaxial crystal optical filter being lithium niobate having a birefringence being greater than 0.05. Greivenkamp teaches an image apparatus for generating an image signal from incident light with higher spatial frequencies of said incident light limited to reduced undersampling artifacts. See column 1, lines 5 through 6, and lines 40 through 62, and column 4, lines 6 through 15. In particular, we find that Greivenkamp teaches an image sensor for generating the image signal from an array of photosites. See column 3, lines 50 through 68, which shows a CCD image sensor element 12 in figure 1. Furthermore, we find that Greivenkamp teaches an optical section shown as element 14 in which figure 2 shows an exploded top view of the spatial frequency filter 14. In addition, we find that Greivenkamp teaches that the spatial filter 14 is comprised of a first plate 16 and at least a second plate 20. See figure 2 and column 4, lines 6 through 15.

Turning to Appellants' argument the Greivenkamp's wave plate removes wavelengths, we fail to find that Appellants' claim 1 recites that the spatial frequency filter does not remove wave lengths. We note that the claim recites the word "comprising"

which does not preclude other elements in the apparatus such as the Greivenkamp's wave sandwich plate 18 shown in figure 2.

Appellants further argue that Fukushima '420 teaches a filter that is structurally different than the filter recited in Appellants' claim 1. See page 5 of Appellants' brief.

The Examiner is not relying on Fukushima '420 for the structural teachings of the Fukushima's filter. The Examiner is relying on Fukushima '420 for the teaching that a birefringent uniaxial crystal optical filter may be made from any of the birefringent crystals such as rutile, calcite or lithium niobate. See Fukushima '420 column 5, lines 1 through 5. Therefore, we find the Fukushima '420 teaches "said birefringent uniaxial crystal optical filter birefringence being greater than 0.05, and said birefringent uniaxial crystal optical filter being lithium niobate" as recited in Appellants' claim 1.

Appellants further argue that there is no logic for combining Greivenkamp with Fukushima '420. See page 5 of Appellants' brief.

When determining obviousness, "[t]he factual inquiry whether to combine references must be thorough and searching." **Lee**, 277 F.3d at 1343, 61 USPQ2d at 1433, **citing McGinley v. Franklin**

Sports, Inc., 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001). "It must be based on objective evidence of record." **Id.** "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" **In re Dembiczak**, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617. "Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact." **Dembiczak**, 175 F.3d at 1000, 50 USPQ2d at 1617, **citing McElmurry v. Ark. Power & Light Co.**, 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

As pointed out above, we have found that Greivenkamp has taught all the limitations in Appellants' claim 1 other than a teaching that the birefringent uniaxial crystal optical filter is being made from lithium niobate. We find that Greivenkamp does teach that the birefringent uniaxial crystal optical filter shown as elements 16 and 20 may be constructed from any of the doubly refracting mineral crystals such as calcite or quartz. See column 4, lines 6 through 11. Fukushima further teaches that the birefringent uniaxial crystal optical filters may be made from any of the birefringent crystals such as rutile, calcite or lithium niobate. Therefore, we find that Fukushima suggests that

lithium niobate as another refracting mineral crystal to be used as a birefringent uniaxial crystal optical filter. Therefore, we find that the Examiner has made a **prima facie** case of obviousness.

In regard to the rejection of claim 12 under 35 U.S.C. § 103 as being unpatentable over Greivenkamp and Fukushima '420, Appellants argue that claim 12 is broader than claim 1 in that it does not have the limitation of "a first plate and at least a second plate of lithium niobate." Appellants argue that claim 12 does not require the number of lithium niobate plates. We have found that the combination of Greivenkamp and Fukushima '420 teaches two lithium niobate plates which would thereby read on Appellants' claim 12. Appellants further argue that claim 12 recites that the spatial filter is made of a highly birefringent uniaxial crystal selected from the group comprising lithium niobate and lithium tantalate. Again, we have shown above that the combination of Greivenkamp and Fukushima '420 teaches a spatial filter made of a highly birefringent uniaxial crystal select comprised of lithium niobate. Therefore, we find that the combination of Greivenkamp and Fukushima '420 teaches all the limitations recited in Appellants' claim 12.

B. Rejection of Claim 5 under 35 U.S.C. § 103 over Greivenkamp and Fukushima '420 in view of Takatori.

Appellants argue that Takatori suggests that an angle between the optical axis of the spacial filter and a line normal to the filter facet is 37.85° for a different reason than Appellants' reason for using the angle.

However, it is not required that the Examiner show that the motivation to make the modification is the same motivation as that of the Appellants' motivation. In **In re Kemps**, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1311 (Fed. Cir. 1996) citing **In re Dillon**, 919 F.2d 688, 693, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (in banc), our reviewing court states:

> [A]lthough the motivation to combine here differs from that of the applicant, the motivation in the prior art to combine the references does not have to be identical to that of the applicant to establish obviousness.

Furthermore, we note that Appellants argue that the reason they use the 37.85° angle is because this is the off the shelf usual cut angle for lithium niobate to be used as a spacial filter. See page 7 of the Appellants' brief. We note that this reason is not critical to Appellants' invention. Therefore, we find that the Examiner has established a **prima facie** case for the rejection of Appellants' claim 5.

C. Rejection of Claim 4 under 35 U.S.C. § 103 over Greivenkamp and Fukushima '399.

Appellants argue that Fukushima '399's filter is significantly different than Appellants' claimed filter. See page 6 of Appellants' brief.

We have found above that Greivenkamp teaches an image apparatus for generating an image signal from incident light with higher spatial frequencies of light limited to reduce undersampling artifacts, said apparatus comprising an image sensor for generating an image signal from an array of photosites, an optical section having a birefringent uniaxial crystal spacial filter interposed in a path of incident light which removes the portion of said high spatial frequencies in the incident light to produce a blurred image on said photosite wherein the spatial subject comprises the first plate and at least a second plate of lithium tantalate. See Greivenkamp, column 1, lines 5 through 7, and lines 40 through 62; column 3, lines 50 through 68 and column 4, lines 6 through 15.

The Examiner is relying on Fukushima '399 for the teaching that the birefringent uniaxial crystal spacial filter being lithium tantalate. We find that Fukushima does teach that lithium tantalate is the most mass produced optical birefringent

crystal. Fukushima '399 also teaches that any other crystal, such as lithium tantalate and tellurium dioxide, may also be used. Therefore, Fukushima suggests to those skilled in the art that lithium tantalate may be used as a birefringent uniaxial crystal spacial filter in the Greivenkamp optical spacial frequency filter shown in figure 2. Therefore, we find that the Examiner has established a **prima facie** case for the rejection of Appellants' claim 4.

D. Rejection of Claim 17 under 35 U.S.C. § 103 over Greivenkamp and Fukushima '399 in view of Watanabe.

Appellants argue that Watanabe is different from the Appellants' invention as further defined in dependent claim 17 in that the rhomboidal pattern is not "rotated about an optical axis of the imaging apparatus." See page 8 of Appellants' brief.

We note that Appellants' claim 17 recites "[a]n imaging apparatus as in claim 1 wherein a thickness of said first plate is equal to a thickness of said second plate." We fail to find that this claim language requires rotated about an optical axis of an imaging apparatus or a rhomboidal pattern. Therefore, we will sustain the Examiner's rejection of claim 17.

In view of the foregoing, we have sustained the Examiner's rejection of claims 1, 4, 5, 10 through 12, 15, 17 and 18 under 35 U.S.C. § 103.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

LEE E. BARRETT)
Administrative Patent Judge)
)
)
MICHAEL R. FLEMING) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
) INTERFERENCES
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